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Anastomosis dehiscence or enteric fistula? Need for precise definitions in the description of surgical complications, even in pediatric surgery

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The most feared complication of a gastrointestinal tract anastomosis is dehiscence, which involves hermeticism loss by the anastomosis, or very close to the suture line, communicating the interior of the gastrointestinal tract with the extraluminal space. When the dehiscence is accompanied by formation of communication between adjacent organs or the external medium, providing both are epithelized, it is known as gastrointestinal system fistula[1]. Systemic manifestations of dehiscense will depend on several factors, basically including the anastomosis location, presence of a drainage system towards the exterior and specific conditions of the patient. Regarding to the article published by Chávez-Aguilar et al., where they describe early complications of esophageal replacement with large intestine by the retrosternal route in children with two different conditions: esophageal atresia (EA) (n = 6) and caustic esophageal burn (n = 13), the authors describe a morbidity of 37% without differenciating in which children, according to the condition, the complications occurred. This proportion corresponds to seven cases that experienced 14 complications, leading to death to one of them[2].

In the conclusions, the authors establish that prevalence of the complication termed "esophageal fistula" turned out to be even lower than that reported in the international literature and quote two works published by López-Ortega and Saldaña-Cortés, both originating from the same institution where Chavez-Aguilar et al. study was conducted, and for that reason, probably they don't reflect global results[3,4].

The study by López-Ortega is a case report of a cervical esophago-gastric anastomosis dehiscence in a child with EA, successfully treated with a biological adhesive; and the second article corresponds to a case-control study exclusively in children with caustic esophageal burn, not treatable with any other means but surgery. Neither of both studies uses the concept of "fistula", the stabilization process of which requires some time after the development of the anastomosis dehiscence (usually 8 to 30 days). The authors of the quoted article establish an alleged low morbidity but do not break it down by type of underlying condition, and also, according to the fistula definition, there may be inconsistencies, since dehiscence and fistula are different. The former always precedes the latter, especialy in post-operative fistulae. Neither the work by López-Ortega, nor that by Saldaña-Cortes speak about fistulae, but about astomosis dehiscence, which particularly in the anatomical region of the neck does not carry local serious complications that can produce such an elevated morbidity as that experienced by seven children with 14 major complications, either of them potentially lethal[2].

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The authors should consider the limitations of a prevalence study, especially in a setting where the source of information can be limited, as in any retrospective study can. Chávez-Aguilar et al. should assume that morbidity is elevated, that the "fistula" definition is inappropriate and that dehiscence is the correct term they should use, and on the other hand, and even though it was not the purpose of the study, envisage the evolution of the surgical treatment the chidren received with regarding to the presence of cervical anastomosis stenosis, which in the study by Saldaña-Cortés is actually reported, and offered significant differences favoring the use of an anastomosis protector, as it was the use of biological adhesives[4].

Finally, some concepts referred to at the end of the discussion (by Khan and Bothereau) have no bibliographic support.

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Dear Dr. Alejandro González Ojeda, Dr. Clotilde Fuentes Orozco and Dr. Jorge Rendón Félix

We appreciate your interest on the article entitled "Early complications with colon esophageal substitution for children via retrosternal", on a study that was carried out in a pediatric reference hospital over a 6-year period. According to your proposal, we clarify the quoted concepts:

With regard to fistula, the basic bibliography defines it as an abnormal connection or canal to a mucous or cutaneous surface, it is considered a benign process, it may require surgical treatment and generally it doesn't put the situation of the organ or the patient's life at risk and that most probably it may resolve spontaneously. In this complication, application of sealants is not justified, since most times the size is too small and in occasions this substance delays the closure of the cervical fistula[1,2].

A dehiscence refers to a complication of wide incisions, it is a disruption or loss of partial or complete continuity of an anastomosis, preferrably intestinal, which may or may not compromise the patient's life and that generally requires surgical treatment for resolution, a problem where fibrin sealants application is not admitted, since according to established criteria, their use is documented in articles for the management of dehiscence of the upper portion of the anastomosis[1,2].

According to the commentaries made in the letter to the editor by Dr. González Ojeda, the death of a patient is first mentioned, which we made clear was no fistula or anastomosis dehiscence complication, but due to septicemia secondary to defficient preparation of the colon.

In the consulted literature, a complication reported as early complication of esophageal replacement with colon transposition is the presence of cervical fistula or cervical leak or proximal leak and not cervical anastomosis dehiscence, the presence of which is actually mentioned in the lower portion of the abdomen, in colon and cologastric anastomoses, which have great impact on the patient and require surgical treatment and where application of the fibrin sealants referred in the articles mentioned in the letter to the editor is of no use[3,4].

We should clarify that sealant application is not made after surgery, but sealant applicatioin is made within the same surgery, prior to total closure of the surgical wound, and that the results were not significantly important, which was referred in the study by Saldaña-Cortés in children exclusively with caustic esophageal burn and not with EA, mentioning dehiscence and fistula as a complication in children managed with biological adhesives: 4/14 (28%) vs. 12/24 (50%), $p = 0.17$[5].

Therefore, we consider that the term "fistula" used in our articule is adequate and is supported by the follow-up visits of the patients and that this doesn't alter the results and the purpose of the study, a concept that reaffirms the terms reported in texts on surgery, validated in the practice of international surgical pediatric clinic.

With regard to the presentation of complications of esophageal replacement with colon tansposition, primary endpoint of our study, it was the following:

– Cervical fistula (two patients diagnosed with alkali ingestion)

- Pneumonia (two patients with alkali ingestion and one with EA III).
- Sepsis (three patients, two with caustic ingestion and one with EA III).
- Atelectasis (two patients with EA III)
- Occlusion by bridles (two patients with EA III)
- Pneumothorax (one patient with alkali ingestion)

It is important mentioning that in three of the studied patients, two complications were reported in each one, one patient with initial diagnosis of EA III had sepsis and occlusion by bridles. Other patient with EA III had pneumonia, as well as intestinal occlusion, which was secondary to a Meckel diverticle. In the patient who died, the cause was sepsis.

We thank the authors of the letter to the editor and the journal itself for the opportunity to clarify these points, with no doubt relevant to the understanding of the fundamental purpose of the publication.

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